



## Saveetha Dental College & Hospitals

162, Poonamallee High Road,  
Velappanchavadi,  
Chennai-77



### MSc Program

#### Goals:

Course will offer a general understanding of the biology of the oral cavity and developing craniofacial region and the interactions between oral and systemic health

- Will enhance knowledge in basic (molecular and cellular), clinical and translational dental and medical research.
- Will offer hands-on training in biomedical research
- Will provide substantial depth to the clinical degree, including a broad understanding of modern biomedical research which is the basis for clinical therapies, and the opportunity to contribute to development of a novel therapy.

#### Duration:

Two years (8 quarters)

#### Method of Training:

Training will include involvement in theory, laboratory & Thesis work.

#### Scheme & Schedule Of Final Examination

Quarter	Units ( Theory & Practical)	Assessment
Q1	a) Biology of Oral tissues	Module closure examination. (OSPE)
Q2	a) Oral Microbiome	Module closure examination(OSPE)
Q3	a) Immunology & Lymphology	Module closure examination(OSPE)
Q4	a) Craniofacial Development & Ontogenesis	I Year Annual Exam(Theory & OSPE)
Q5	a) Integrative biology and Biomaterial science	Module closure examination(OSPE)
Q6	a) Sensory Neuroscience & Pain mechanisms	Module closure examination(OSPE)
Q7	a) Tissue Engineering	Module closure



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		examination(OSPE)
<b>Q8</b>	CAT & Thesis consolidation	<b>Final examination</b> (Theory, OSPE, VivaVoce)

### Curriculum

#### Biology Of Oral Tissues

Anti-microbial peptides. Structure and function of oral mucosa. Bone pathologies. Cell biology of bone. Cytoskeleton. Desmosomes and cell attachment. Introduction to stem cells. Oral defence mechanisms.

#### Oral Pathology & Oral Microbiome

Carcinogenesis. Acquisition and metabolism of oral flora. Oral commensal and opportunistic pathogens. Dental plaque. Disease of the salivary gland. Microbiology and periodontal disease. The mouth as a microbial habitat. Oral defence mechanisms. Oral infections. Overview of infectious agents. Pathology of pre cancer. Overview of virulence.

#### Dental Hard Tissues & Microenvironment

Mechanisms and underlying principles and of the diseases of dental hard tissue loss, including calcium phosphate chemistry, chemical interaction with acids, and protective role of salivary proteins How an understanding of these processes can contribute to the treatment, restoration, and ultimately prevention of these diseases.

#### Basics Of Minimally Invasive Dentistry

The underlying biochemical and physicochemical mechanisms of clinical dental prevention methods How protective mechanisms against hard dental tissues diseases exist in the oral environment and how these can be used to prevent the disease. The progress of hard dental tissue diseases and learn about existing and novel detection methods. How novel biomaterials are developed mimicking oral environment.

#### Biomaterialization And Biomimetics



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Mechanisms and underlying principles of biomineralisation with particular emphasis on hard tissues relevant to the oral environment such as enamel, dentine and bone formation. Also, how an understanding of these processes can lead to the development of synthetic biomaterials and biomimetic products with applications in Oral Biology.